

A1
Cont'd.

a source contact region, etched into the P⁻ well, and formed of an N⁺ doped well and a P⁺ doped well, wherein the P⁺ doped well interfaces the N⁻ epitaxial layer and the P⁻ well, and the N⁺ doped well is spaced apart from and located above the P⁺ doped well;

whereby the snap-back is reduced and the avalanche-breakdown current endurance is increased.

4. (New) A method of manufacturing a power MOSFET device, comprising the steps of:

forming an N⁻ epitaxial layer on an N⁺ silicon substrate;

forming a gate layer above the N⁻ epitaxial layer;

implanting a P⁻ dopant to form a P⁻ well in the N⁻ epitaxial layer;

forming an N⁺ source region above the P⁻ well;

etching the N⁺ source region and implanting a P⁺ dopant to form a P⁺ well, wherein the P⁺ well interfaces the N⁻ epitaxial layer and the P⁻ well, and the N⁺ source region is spaced apart from and located above the P⁺ well;

depositing a glass layer; and

performing a metalization of the source contact and forming a drain contact;

whereby the snap-back is reduced and the avalanche-breakdown current endurance is increased.

5. (New) The method as claimed in claim 4, wherein the formation of the gate layer comprises the steps of:

etching a field oxide and growing a gate oxide layer;

depositing a polysilicon layer on the gate oxide layer, performing photomasking and etching the polysilicon layer.